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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,741	02/26/2002	Delphine Legrand	FR 000067	5244

7590 04/19/2005
US Philips Corporation
Intellectual Property Department
580 White Plains Road
Tarrytown, NY 10591

EXAMINER

AGHDAM, FRESHTEH N

ART UNIT PAPER NUMBER

2631

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,741

Applicant(s)

LEGRAND ET AL.

Examiner

Freshteh N. Aghdam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2002.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-10 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it should be limited to a single paragraph.

Correction is required. See MPEP § 608.01(b).

Drawings

The drawings are objected to under 37 CFR 1.83(a) because they fail to show the functions of the blocks in figure 1 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures

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appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 1, 3, and 7 are objected to because of the following informalities:

As to claim 1, the acronym "PSK" should be written fully once so as to overcome indefiniteness.

As to claim 3, the expression "as claimed claim 2" should be rewritten as "as claimed in claim 2".

As to claim 7, the step numbers recited in the claim should be removed from the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Denno et al (US 5,287,067).

As to claims 1, 4, and 6, Denno et al teach a communication system that includes a receiver to receive phase shift keying (i.e. PSK) modulation signals S and comprising estimation means for estimating a frequency error relating to a signal based on a phase signal (Col. 2, Lines 18-22; Col. 3, Lines 14-20) wherein the receiver comprises calculation means for calculating a phase sequence based on decisions made on symbols and means for detecting and correcting phase jumps in this initial sequence to supply a final sequence to the frequency error estimation means (Col. 3, Lines 13-31, Col. 5, Lines 20-24, 30-41). One of ordinary skill in the art would clearly recognize that it is inherent for any communication system to have a transmitter to transmit a signal to a receiver.

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oura et al (US 6,038,267), and further in view of Junell (US 6,181,755).

As to claim 7, Oura et al teach a digital demodulator in which detects and corrects phase jumps in an initial phase signal coming from a PSK modulation wherein the initial sequence is used to produce a plurality of modified sequences which each compensates for a phase jump (Col. 4, Lines 49-55; Col. 5, Lines 49-55). Oura et al is silent about calculating straight line equations which determine the initial sequence and the modified sequences and a calculation step of calculating for a mean difference between the initial or modified phases and the phases produced by the corresponding straight line equation wherein the final sequence is formed by the sequence whose mean difference is minimal. Junell teaches using a straight line fitting by applying the least square sum method in frequency error estimation by minimizing the error (Col. 10, Lines 62-67; Col. 11, Lines 6-29). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Junell with Oura et al in order to estimate the frequency error (Col. 10, 62-64). However, it is well known that the minimized error calculated based on the phases produced by the straight line equation and the initial phase is in the direct relationship with the mean difference (i.e. the mean

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difference is a function of the estimated error).see the reference (RLS) provided as pertinent art with this office action.

As to claim 8, Oura et al teach obtaining the modified signal values from a phase signal phase-group by phase-group (Col. 5, Lines 49-57).

As to claims 9 and 10, one of ordinary skill in the art would clearly recognize that implementing the steps of a method of detecting and correcting phase jumps by a computer program in a processor.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Denno et al, and further in view of Oura et al (US 6,038,267) and Junell (US 6,181,755).

As to claims 2 and 3, Denno et al teach all the subject matters as recited in claim 1, except for the phase jumps detection and correction means comprising the steps of modifying the initial sequence to produce a plurality of modified sequences that compensate for a phase jump configuration, calculating straight line equations which determine the initial sequence and the modified sequences and calculation means for calculating for a mean difference between the initial or modified phases and the phases produced by the corresponding straight line equation wherein the final sequence is formed by the sequence whose mean difference is minimal. Oura et al teach a digital demodulator in which detects and corrects phase jumps in an initial phase signal coming from a PSK modulation wherein the initial sequence is used to produce a plurality of modified sequences phase-group by phase-group in which each compensates for a phase jump (Col. 4, Lines 49-55; Col. 5, Lines 49-55). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of

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Oura et al with Denno et al in order to efficiently correct for the frequency offset and phase offset between two carriers (Col. 1, Lines 32 and 33). Junell teaches using a straight line fitting by applying the least square sum method in frequency error estimation by minimizing the error (Col. 10, Lines 62-67; Col. 11, Lines 6-29). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Junell with Denno et al and Oura et al in order to estimate the frequency error (Col. 10, 62-64). However, it is well known that the minimized error calculated based on the phases produced by the straight line equation and the initial phase is in the direct relationship with the mean difference (i.e. the mean difference is a function of the estimated error) see the reference (RLS) provided as pertinent art with this office action.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Denno et al, and further in view of Oura et al.

As to claim 5, Denno et al teach all the subject matters claimed above, except for the initial sequence being modified phase-group by phase-group. Oura et al, in the same field of endeavor, teach modifying a phase signal phase-group by phase-group.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. <http://www.cs.may.ie/research/sigsys/kidson/sld011.htm>, Namiki (US 4,057,762), Soga et al (US 5,920,228), Altes (US 5,619,537), and Shiraishi et al (US 6,683,921).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is (571) 272-6037. The examiner can normally be reached on Monday through Friday 9:00-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Freshteh Aghdam

April 14, 2005


MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER
